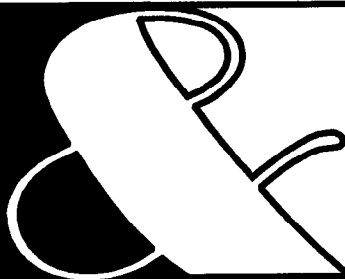


# hazardous substances



# Public Health

*A publication of the Agency for Toxic Substances and Disease Registry*

Volume 1, Number 3

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## Death of Toddler Holds Message for Primary Care Providers

Substandard housing was to blame for the death of a Wisconsin toddler, says Dr. Harlan Stueven, an ATSDR clinical fellow at the Medical College of Wisconsin who served as toxicology consultant in the child's case. Despite treatment, the 28-month-old boy, whose blood lead level was 144  $\mu\text{g/dL}$ , died September 14, 1990, after ingesting paint chips. Blood lead levels as low as 10  $\mu\text{g/dL}$  are known to cause neurobehavioral impairment in children. The child had been exposed to lead from flaking paint in a dilapidated nonresidential building where he and his parents had been living. House dust and paint samples taken from the structure contained lead at levels 10 times greater than recent guidelines recommend.

Death from lead exposure is unusual now, since lead-based paint is banned in new buildings. "In 3 years of work as a toxicology specialist, I've never seen a child lead-intoxicated to this extent," said Dr. Stueven, who termed the event "very uncommon." The child's death caused the Centers for Disease Control to recommend that all children be tested for lead exposure before their first birthday. Young children are particularly susceptible to the damaging effects of lead.

Lowered levels of lead in gasoline, air, food, and releases from industrial operations, principally smelters, have resulted in lower mean blood levels. Despite such measures, lead from paint, dust, and soil in inner-city urban areas has been affected very little. Lead in the home environment is the major remaining source of lead exposure.

What message does the case hold for medical practitioners? According to Dr. Stueven, primary care providers should:

- Be aware of the potential for childhood lead poisoning.
- Know who's at risk. Although children from inner-city neighborhoods with deteriorating housing show the highest prevalence of elevated blood lead levels, Dr. Stueven warns against assuming that only children from economically disadvantaged backgrounds are at risk of lead exposure, citing the phenomenon of "yuppie plumbism": "A family will move into an older home and start renovating it—perhaps stripping paint—then the children start to have problems" due to lead exposure from lead-contaminated paint and dust.
- Include lead poisoning in the differential diagnosis of children with altered mental states. Two other hallmarks of lead poisoning are abdominal pain and anemia.
- Know their resources. A list is provided below.

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Public Health Service

Agency for Toxic Substances and Disease Registry



## RESOURCES ON LEAD POISONING

Resources on lead poisoning are available from ATSDR. The Agency also has several ongoing lead-related activities.

**The Nature and Extent of Lead Poisoning in Children in the United States: A Report to Congress.** In 1986, when Congress passed the Superfund Reauthorization and Amendments Act, or SARA, it charged ATSDR with preparing a report on lead poisoning. The central message of the 1988 report is that an enormous number of young American children will fail to realize their full intellectual potential because of their exposure to lead in the environment. About 17% of children in Standard Metropolitan Statistical Areas are exposed to environmental sources of lead that place them at risk of adverse health effects. Three to four million children are estimated to have this level of risk. In addition, 400,000 fetuses are at risk through maternal exposure. Exposure to lead in paint, dust, and soil remains a problem of poor housing and impoverished neighborhoods. The report recommends effective use of screening programs to detect children exposed to environmental sources of lead. An extensive bibliography is included.

The report is available from the National Technical Information Service (NTIS), Sills Building, 5285 Port Royal Road, Springfield, VA 22151; telephone (703) 487-4650. To receive an order form or further information contact: Max Lum, Ed.D., M.P.A., ATSDR, 1600 Clifton Road, NE, Mailstop E33, Atlanta, GA 30333; telephone (404) 639-0730.

**Case Studies in Environmental Medicine: Lead Toxicity.** A series of self-instruction manuals for health care providers called *Case Studies in Environmental Medicine* is designed to guide physicians through the diagnosis and treatment of illness related to hazardous substance exposure. Each case study covers a specific contaminant. The first monograph in the series, *Lead Toxicity*, was mailed to 30,000 pediatricians who are members of the American Academy of Pediatrics.

Continuing medical education credits are available. For more information, contact Donna Orti, ATSDR, 1600 Clifton Road, NE, Mailstop E33, Atlanta, GA 30333; telephone (404) 639-0734.

**Lead Initiative.** This program is designed to evaluate all lead sites for which a Health Assessment has been issued. An initial search in 1989 of 1,180 sites on EPA's National Priorities List (NPL) revealed that 630 were contaminated with lead, and that 534 of the Health Assessments specifically mention lead contamination. There are four purposes to ATSDR's Lead Initiative:

- To evaluate whether Health Assessments are adequately implementing the recommendations in the Lead Report;
- To evaluate the Health Assessment process as it affects public health at lead-contaminated sites;
- To reassess Health Assessments at sites with lead contamination, in light of new scientific information; and
- To identify populations for whom ATSDR should undertake follow-up health activities, such as health education or health studies.

Future activities being planned as a result include:

- Preparing addenda to the Health Assessments, conducting Health Consultations, and developing Public Health Advisories or other notices as needed to address public health issues;
- Developing health education programs to provide information on the health effects of lead for local health officials; and
- Developing health education programs to provide community-based groups with the same information.

## hazardous substances & Public Health

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For more information, contact Sharon Williams-Fleetwood, ATSDR, 1600 Clifton Road, NE, Mailstop F47, Atlanta, GA 30333; telephone (404) 639-1758.

**Health Studies.** ATSDR's Division of Health Studies continues to evaluate populations at several lead sites nationwide. From 1985 to 1989, the Division conducted nine health studies at sites such as Leadville, Colorado; Leeds, Alabama; and Lake Coeur d'Alene, Idaho. For more information, contact Sharon Campolucci, ATSDR, 1600 Clifton Road, NE, Mailstop E31, Atlanta, GA 30333; telephone (404) 639-0550.

### **Public Comment Period for Health Assessments Announced**

A public comment period has been initiated for health assessments, federally mandated reports issued by ATSDR that present the Agency's findings on the health effects of contamination at specific sites. According to Bob Williams, director of the Division of Health Assessment and Consultation, "ATSDR has considered making health assessments available for public comment for quite some time. Recent meetings and dealings with the public have confirmed our belief that a public comment period would be beneficial to all parties concerned."

A health assessment is an evaluation of data and information on the release of hazardous substances into the environment conducted to assess any current or future impact on public health. The reports are also used to develop health advisories or other recommendations and to identify studies or actions needed to evaluate and mitigate or prevent human health effects.

Input from the Environmental Protection Agency (EPA), state and local health entities, and the general public regarding the health assessment document serves valuable public health objectives. Although community involvement is actively solicited throughout the development of the health assessment, certain information that would not be available through other means can be acquired through the public comment process. Every effort is made to collect the most current information regarding a site when the health assessment is initiated; however, the public comment period helps to ensure that no critical information has been overlooked. According to Mr. Williams, "The public comment process is expected to improve the quality of individual health assessments and to increase public confidence in the [health assessment] process." (For a description of the public comment procedure, see box, p.4.)

ATSDR intends to release health assessments in three phases: Health Assessment—Initial Release, which is pro-

vided to EPA and the affected state(s); Health Assessment—Public Comment Release, which reflects EPA and state comments, as appropriate; and the Health Assessment, which contains responses to public comments. After the close of the public comment period, ATSDR will prepare a response to all written comments received during the public comment period. After all public comments are addressed, the Health Assessment, representing the Agency's opinion as of the date issued, will be released. However, the health assessment process is open-ended: should ATSDR obtain additional information which, at the Agency's sole discretion, indicates a need to revise or append the conclusions previously issued, the Agency will do so.

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***Input from the Environmental Protection Agency, state and local health entities, and the general public regarding the health assessment document serves valuable public health objectives.***

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These procedures do not apply to health assessments prepared by states that perform their own health assessments through cooperative agreements. In accordance with program requirements, these states have developed their own procedures for obtaining public comment on health assessments that they prepare.

ATSDR is required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section 104 (i) [42 U.S.C. 9604(i)], as amended, to perform a health assessment for each site on or proposed for the National Priorities List (NPL). In addition, CERCLA authorizes ATSDR, at its discretion, to conduct health assessments for sites in response to requests from the public (petitioned health assessments).

The Health Assessment—Initial Release represents the Agency's best effort, based on currently available information, to fulfill the statutory criteria set out in CERCLA 104(i)(6). To the extent possible, the Health Assessment—Initial Release presents an assessment of the potential risks to human health posed by the site or facility at issue. When appropriate, based on the results of this document, actions authorized by CERCLA may be undertaken to prevent or mitigate human exposure or risks to health. The Health Assessment—Initial Release is also used by the Health Activities Recommendations Panel (HARP) to determine if follow-up health actions are appropriate.

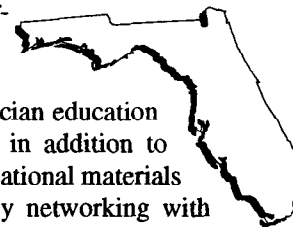
## Public Comment Procedure for Health Assessments

1. A public notice announcing that a Health Assessment—Public Comment Release is available for public comment will appear in at least one newspaper serving the community near the site. A press release may also be used to announce that a Health Assessment—Public Comment Release is available for public comment. Individual notice of the public comment period for a health assessment may be provided, where deemed appropriate, to federal and state authorities; potentially responsible parties; owner or operator (if known); individual or group petitioning for a health assessment; and citizen groups.
2. The Health Assessment—Public Comment Release will be distributed to certain repositories (e.g., local libraries) so that any interested person may review the Health Assessment—Public Comment Release. The repositories and an address where comments must be sent will be announced in the public notice. The Health Assessment—Public Comment Release will not be available through the mail.
3. The public comment period will extend 30 calendar days from the date of the public notice. To be considered, public comments must be in writing and must be received at the ATSDR office listed in the public notice by the close of business on the 30th day (or close of business the first business day after the 30th day).
4. After the close of the public comment period, ATSDR will prepare a response to all written comments received during the public comment period. These comments from the public and ATSDR's responses will become part of the Agency's record for individual sites.
5. After all public comments are addressed, the health assessment will be finalized; the responses to the comments will be contained as an appendix.
6. ATSDR may use public meetings to present health assessments contingent upon community interest and the extent and complexity of comments received during the public comment period.

## From The States...

### Florida

The Florida Department of Health and Rehabilitative Services (HRS) Environmental Health Program offers physician education in environmental toxicants, in addition to designing seminars and educational materials for health professionals. By networking with state and federal agencies, HRS is able to obtain membership mailing lists of agencies with established reputations and achieve linkages with key personnel who can help with needs assessment and encourage attendance at seminars.



The Florida program works with groups that have directives to provide education as part of their funding, such as Area Health Education Centers (AHECs). Florida's program includes regional in-house seminars and seminars jointly sponsored with statewide AHECs.

Special interest groups are invited to sponsor relevant HRS seminars. For example, a pesticide speaker may be sponsored by a migrant labor program, or a pediatric topic related to environmental exposures may be sponsored by a childhood disease prevention group. The Florida program is also able to use seminar speakers available through the Association of Occupational and Environmental Clinics, Community Health Centers, and universities.

Florida's program interfaces with existing state conferences. Seminars produced by HRS have been presented at state medical conferences, such as those given by the Florida Academy of Family Physicians, the Florida Medical Association, and the Florida Osteopathic Medical Association. Another training opportunity was offered by a national conference held in the state by the National Association of County Health Officials.

In response to feedback received about the lack of environmental health resources available to health care professionals, HRS compiled a Toxic Substance Resource Directory. The Directory contains telephone numbers that provide useful information, including occupational resources. A follow-up questionnaire was employed to assess the usefulness of the Directory for health care professionals.

The state's program is evaluated through pre- and post-testing and participant evaluation forms. By the end of the grant funding period (September 1991), Florida will have reached an estimated total of 700 public health officials and health professionals through its cooperative agreement with ATSDR.

For more information, please contact Julia M. Winter, M.Ed., Environmental Specialist, HRS, Environmental Epidemiology, Suite C, 2720 Blairstone Rd., Tallahassee, FL 32301; telephone (904) 488-3370.

## Massachusetts

To provide education about environmental hazards to health care professionals, the Massachusetts Department of Public Health (MDPH) initiated a 2-year project (the Project) producing informational materials and a series of educational programs. The Project is funded by ATSDR's Division of Health Education through a cooperative agreement with MDPH's Division of Environmental Health Assessment and the Massachusetts Health Research Institute.



The Project developed an active alliance with the Massachusetts Medical Society (MMS), which cooperated by corresponding with their membership, arranging for continuing medical education credits for seminars, providing facilities and support for meetings, and cosponsoring programs. At the beginning of the Project, MMS printed and mailed a needs assessment questionnaire to its 15,000 members. The survey asked physicians their views on, knowledge of, and interest in the topic of environmental hazards; whether environmental hazards were a consideration in their daily practice (regardless of specialty); where they sought additional information; and which organization they would most like to see sponsor and develop materials about environmental health. Approximately 1,600 physicians (11%) from 23 different medical specialties responded to the survey.

When asked about the preferred format of environmental health hazard education programs, the majority of respondents (72%) said they would attend a seminar. The most popular sponsor (31%) was the local hospital, through a grand rounds program. In October 1990, the Project initiated grand rounds programs in local hospitals across the state. The number of physicians attending hospital-based grand rounds programs on environmental hazards has averaged about 30, with the number of preregistrants at 25. More than 300 physicians have been reached through the sessions; an estimated 800-900 physicians have received materials.

When queried about specific sources used for additional information, 30% of the respondents indicated that they contacted MDPH, 18% contacted the Massachusetts Department of Environmental Protection, 10% contacted the American Cancer Society, and 4% contacted the Cancer

Information Service. Other sources identified by respondents include the Poison Control Center (14%), the University of Massachusetts Medical Center's Occupational Health Clinic (4%), colleagues (15%), and textbooks (6%). On the basis of answers received from this question, the Project compiled a list of agencies and organizations for physicians to contact.

For information on the Project, please contact Susan Bernstein, M.S., Project Director, Massachusetts Department of Public Health, Environmental Education Project, 150 Tremont St., 7th Fl., Boston, MA 02111; telephone (617) 727-7170.

## Minnesota

The Minnesota Department of Health has issued a 76-page report entitled *Environmental Issues in Primary Care* that provides health care professionals with information on environmental health issues related to air, land, and water quality. The report includes material on human exposures, health effects, intervention for specific environmental contaminants, case studies, and suggested readings. The report was created to help physicians develop an awareness about some of the exposures their patients might encounter, emphasize the importance of including environmental and occupational factors in taking routine patient histories, and provide resources for physicians who would like more information on environmental health.



This collaborative effort of the Minnesota Department of Health and the Freshwater Foundation's *Health & Environment Digest* combines the latest research in environmental health issues with case studies to create a reference useful in the clinical context. Funding to produce this report was provided by ATSDR.

*Environmental Issues in Primary Care* includes chapters on "Drinking Water and Environmental Contaminants"; "Indoor Air Pollutants"; "Metal Contaminants"; "Contaminants in the News," including dioxins, PCBs, electric and magnetic fields, global warming and stratospheric ozone depletion, disease clusters, and food safety issues; "Assessing and Explaining Risk"; "Evaluating Suspected Environmental or Occupational Illness"; and "Resources," including referral and consultation resources, continuing medical education, computerized information sources, and state, federal, and national resources.

A second environmental health publication, *Lead Poisoning and Children*, was developed for the Minnesota Department of Health by the Freshwater Foundation's *Health &*

*Environment Digest.* ATSDR provided funding to produce the 16-page booklet.

*Lead Poisoning and Children* discusses sources of lead exposure, routes of exposure, lead's effects on health, estimates of populations at risk, testing and diagnosing lead poisoning, intervention, recommendations for preventing exposure, and references for further reading.

For more information on *Environmental Issues in Primary Care* and *Lead Poisoning and Children*, please contact Mary Zetterlund, Division of Environmental Health, Minnesota Department of Health, 925 S.E. Delaware St., P.O. Box 59040, Minneapolis, MN 55459-0040; telephone (612) 627-5015.

## **Residents Near Incinerator Queried About Illnesses**

From May 31 until mid-July, ATSDR interviewed residents living around the now-closed Caldwell Systems, Inc. hazardous waste incinerator near the city of Lenoir in Caldwell County, North Carolina. The facility was the subject of an ATSDR public health advisory last year.

Staff from the Research Triangle Institute (RTI) of Research Triangle Park, an ATSDR contractor, conducted interviews in the homes of Caldwell County residents. The survey took place in two areas of the county: near Hudson and in Gamewell. Interviewers were readily identifiable by their green identification badges, which contained a photograph of the wearer.

Interviewers asked questions about any symptoms or diseases experienced by residents of the two areas to determine if there was an excess of self-reported illnesses. No blood tests were taken as a part of the study. The results of this survey will be used in planning additional follow-up health studies that may be needed. This study is not intended to determine any link between chemical exposure from the incinerator site and adverse health effects.

## **Greater Community Participation Sought Through Series of Public Meetings, Workshops**

"Community exposure to hazardous substances at waste sites is a matter of great concern to the public and health and environmental officials alike," according to Barry L. Johnson, Ph.D., Assistant Surgeon General and Assistant Administrator of ATSDR.

"Clearly, there are acute health effects associated with some sites," Dr. Johnson said. "But we don't have a good

sense yet of the relationship between chronic health effects and sites, although there is a developing scientific literature that indicates cause for concern. Expanding our scientific knowledge about what's happening in communities around waste sites is one of the purposes of our Agency's work. I think as we continue to do public health assessments of waste sites, study the health of people who have been exposed to these substances and work to prevent further exposures, we will have more answers."

Johnson's statements were made at a series of June meetings and workshops in Arlington, Virginia, with citizens living around hazardous waste sites, as well as federal, state, and local health and environmental officials. ATSDR solicited comments from participants on such topics as obtaining reports of community health concerns, involving the community in public health assessments, and communicating the findings of a public health assessment to the affected community.

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***Members of communities located  
around hazardous waste sites  
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assessing the impact that exposure to  
hazardous substances may have on  
their health.***

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In holding workshops on public health assessments of hazardous waste sites, ATSDR is seeking public comment on and involvement in the health assessment process. Members of communities located around these sites throughout the nation made it clear that they want to be substantively involved in assessing the impact that exposure to hazardous substances may have on their health.

"We at ATSDR have a mission to prevent and mitigate adverse health effects that result from exposure to hazardous substances in the environment, and an important part of that mission is to hear an assessment of the kind of job we are doing from the communities we are committed to serving," Dr. Johnson said.

ATSDR is planning another workshop on public health assessments later this year in Chicago. Workshops are open to the public. Persons interested in attending future workshops should contact: Lydia Ogden Askew, Community Involvement Liaison, Division of Health Assessment and Consultation, ATSDR, 1600 Clifton Rd., NE, Mailstop E32, Atlanta, GA 30333; telephone (404) 639-0609.

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## Calendar

### AUGUST

Aug. 11-15: Third Conference of the International Society for Environmental Epidemiology, Kibbutz Ramat Rachel, Israel. Contact: Pamela Deutsch, Conference Secretariat, P.O. Box 61282, Jerusalem ISRAEL, (972 2) 243577.

### SEPTEMBER

Sept. 3-6: National Institute for Occupational Safety and Health National Conference, Cincinnati, OH. Contact: Tim Groza, Centers for Disease Control, NIOSH, 1600 Clifton Rd., NE, Mailstop D37, Atlanta, GA 30333, (404) 639-2376.

Sept. 9-13: 2nd International Congress on Environmental Health: Breaking the Communication Barrier, Brighton, United Kingdom. Contact: Sue Taylor, Conference Department, Institution of Environmental Health Officers, Chadwick House, Rushworth Street, London SE1 0QT, England, (071) 928 6006.

Sept. 10-12: 8th International Symposium on Epidemiology in Occupational Health, Paris, France. Contact: 8th ISEOH 91, 120 Avenue Gambetta, 75020 Paris FRANCE.

Sept. 10-13: North Carolina Public Health Association Annual Meeting, Fayetteville, NC. Contact: Lacy Williams, E. Newton Smith Public Health Center, 227 Fountainhead Lane, Fayetteville, NC 28301, (919) 433-3660.

Sept. 16-20: 7th International Symposium on Inhaled Particles, Edinburgh, Scotland. Contact: Dr. A. Robertson, Organizing Secretary, British Occupational Hygiene Society, Institute of Occupational Medicine, Roxburgh Place, Edinburgh EH8 9SU SCOTLAND.

Sept. 20-25: National Association of Community Health Centers, Inc. 22nd Annual Convention and Community Health Institute, San Francisco, CA. Contact: Kathy Kunkler, Meetings Manager, NACHC, 1330 New Hampshire Ave., NW, Suite 122, Washington, DC 20036, (202) 659-8008.

Sept. 23-27: Dioxin '91: 11th International Symposium on Chlorinated Dioxins and Related Compounds, Research Triangle Park, NC. Contact: Sharon Johnson Wills, Program Assistant, Office of Continuing Education, University of North Carolina School of Public Health, CB# 8165, Miller Hall, Chapel Hill, NC 27599-8165, (919) 966-1104.

Sept. 25-28: Fourth International Congress on Environmental Lung Disease, Montreal, Quebec, Canada. Contact: American College of Chest Physicians, 3300 Dundee Rd., Northbrook, IL 60062, (708) 698-2200.

### OCTOBER

Oct. 6-8: Risk Assessment: Risk Management: Risk Communication, Des Moines, IA. Contact: National Environmental Health Association, 720 S. Colorado Blvd., Suite 970, South Tower, Denver, CO 80222, (303) 756-9090.

Oct. 7-8: Preventing Childhood Lead Poisoning, Washington, DC. Contact: Alliance To End Childhood Lead Poisoning, 600 Pennsylvania Ave., SE, Suite 100, Washington, DC 20003, (202) 543-1147.

Oct. 15-16: Illinois Environmental Health Association Annual Education Conference, Springfield, IL. Contact: Diana Johnston, Illinois Environmental Health Association, c/o Illinois Department of Public Health, Division of Environmental Health, 525 West Jefferson St., Springfield, IL 62761, (217) 782-5830.

Oct. 22-25: Conference on Lead and Health, Palm Springs, CA. Contact: J.T. Miller, Lead Industries Association Inc., 295 Madison Ave., New York, NY 10017, (212) 578-4750.

### NOVEMBER

Nov. 4-8: 57th Annual Scientific Assembly, San Francisco, CA. Contact: American College of Chest Physicians, 3300 Dundee Rd., Northbrook, IL 60062, (708) 698-2200.

Nov. 6-8: National Committee on Vital and Health Statistics (Full Committee), Washington, DC. Contact: Nancy Hamilton, National Center for Health Statistics, 6525 Belcrest Rd., Room 1100, Hyattsville, MD 20782, (301) 436-7122.

Nov. 7-8: Morbidity/Mortality Gap: Is it Race or Racism?, Atlanta, GA. Contact: Gladys H. Reynolds, Ph.D., Chair, American College of Epidemiology Annual Meeting Program Committee, Office of the Director, Centers for Disease Control, 1600 Clifton Rd., NE, Mailstop A50, Atlanta, GA 30333, (404) 639-3318.

Nov. 10-14: Public Health and a National Health Program, Atlanta, GA. Contact: American Public Health Association, Meeting Registrar, 1015 15th St., NW, Washington, DC 20005, (202) 789-5600.

Nov. 17-22: Measuring, Understanding, and Predicting Exposures in the 21st Century, Atlanta, GA. Contact: Dr. Gerry Akland, (MD-75) Technical Program Chairman, 1991 Annual Meeting of the International Society of Exposure Analysis, U.S. Environmental Protection Agency, Research Triangle Park, NC 27711, (919) 541-4477.

**PUBLICATIONS****IOM Recommendations To Alleviate O-E Physician Shortage**

A 1989 needs estimate commissioned by the Institute of Medicine (IOM) reported the existence of a national shortage of 3,100 to 5,500 physicians with special competence in occupational and environmental (O-E) medicine. Now, an IOM subcommittee has made six recommendations concerning how federal and state governments, medical schools, and medical societies can counter this shortage.

In a 31-page report entitled "Addressing the Physician Shortage in Occupational and Environmental Medicine," IOM recommends six specific measures to alleviate the shortage of O-E physicians:

- integrate occupational and environmental medicine into medical school curricula to increase students' interest in these fields;
- establish 10 to 15 centers to train future teachers and researchers in occupational and environmental medicine;
- expand occupational medicine to include the fledgling field of environmental medicine, thereby increasing the number of physicians competent to practice in either area;
- increase funding to support medical school faculty members committed to teaching and research in occupational and environmental medicine;
- increase support for residency and fellowship training; and
- adopt new routes to certification and accreditation in occupational and environmental medicine.

The 1991 report notes that environmental and occupational diseases cover a broad range of illnesses including lung cancer from asbestos and radon exposure; bladder cancer in dye workers; leukemia from benzene exposure; asthma and chronic bronchitis from organic dust exposure; and heart disease from carbon disulfide exposure. The annual cost in the United States from such diseases is an estimated \$6 billion, with workers' compensation contributing less than 10 percent and tort suit awards less than 5 percent of the total cost.

The study was sponsored by the U.S. Public Health Service, ATSDR, the National Institute of Environmental Health Sciences, and the Environmental Protection Agency. The publication is the second in a two-monograph series. The

first report, released by IOM in 1990, is entitled "Meeting Physicians' Needs for Medical Information on Occupations and Environments."

Limited copies of "Addressing the Physician Shortage in Occupational and Environmental Medicine" are available from Max R. Lum, Ed.D., M.P.A., Director, Division of Health Education, ATSDR, 1600 Clifton Rd., NE, Mailstop E33, Atlanta, GA 30333; telephone (404) 639-0730.

**Proceedings of Fourth National Environmental Health Conference**

The volume of proceedings for the Fourth National Environmental Health Conference—sponsored by ATSDR, the Center for Environmental Health and Injury Control, Centers for Disease Control, and the Association of State and Territorial Health Officials—has now been published and is available to the public. This conference, entitled "Environmental Issues: Today's Challenge for the Future," was held in San Antonio, Texas, on June 20-23, 1989. The 326-page volume contains 47 presentations from the conference, covering a wide spectrum of important environmental issues that include epidemiology and laboratory methodologies, individual environmental hazards, ethical and legal issues, communication and risk assessment, psychosocial factors, and institutional programs.

Copies may be purchased from the U.S. Government Printing Office, Washington, DC 20402-9325; telephone (202) 783-3238; fax (202) 275-0019. Postage-paid cost: domestic-\$17; foreign-\$21.25.

A few single copies are available without charge to state and local government agencies from the Office of Policy and External Affairs, ATSDR, 1600 Clifton Rd., NE, Mailstop E28, Atlanta, GA 30333.

**Degrees in Hazardous Waste Management**

A comprehensive report on hazardous waste education and training has been produced by the Bureau of Health Professions, with funding from ATSDR. The study identifies colleges or universities that provide academic preparation in the field. It also offers a model curriculum for a master of science program in hazardous waste management. Demand for the publication has been very strong since its April 15th release, according to project officer Barry Stern.

Identified in the study are 208 colleges and universities and 675 separate and distinct noncredit continuing education short courses. Major providers of the short courses are evaluated. Finally, the report examines hazardous waste management credentialing programs.



## **MSH Environmental Health Policy Course**

Management Sciences for Health (MSH) is presenting a 3-week course entitled "Environment and Health: Strengthening Policies and Programs," August 26-September 13, 1991, in Boston, Massachusetts. The course is designed for policymakers and program managers in environmental and occupational health from governmental and nongovernmental organizations, businesses, labor unions, and community organizations. It will explore five major topics: (1) Environmental Health Problems and Their Recognition, (2) Principles of Environmental Health Policies, (3) Prioritization of Needs, (4) Policy Development and Implementation, and (5) Program Management.

The registration fee for the course, which includes tuition and course materials, is \$3800. To reserve a space in the course, please request an application form from Elizabeth Metz, Management Training Program, MSH. For questions about course content, please contact Barry S. Levy, M.D., M.P.H., Director of the Program on Environment and Health, MSH, 165 Allandale Rd., Boston, MA 02138; telephone (617) 527-9202; fax (617) 965-2208.

## **Neurobehavioral Testing Battery Workshop**

On September 11-13, 1991, ATSDR's Division of Health Studies is hosting a workshop to develop a standardized neurobehavioral testing battery for use in environmental health field studies. The workshop will help the Agency select methods and strategies that determine whether neurobehavioral effects are associated with environmental chemical exposures.

Workshop participants will provide information to help ATSDR staff develop:

- testing methods for immediate use in environmental health field studies of adults;
- pediatric neurobehavioral testing batteries for environmental health field studies; and
- criteria and review procedures for future, progressive modifications of standard batteries.

An adjunct workshop theme is the review of current neurobehavioral testing methods for environmentally exposed people of different cultures and non-English primary languages. For more information on the workshop, please contact Leslie J. Hutchinson, M.D., M.P.H., Division of Health Studies, ATSDR, 1600 Clifton Rd., NE, Mailstop E31, Atlanta, GA 30333; telephone (404) 639-0563.

## **Community Intervention Workshop**

In conjunction with the American College of Epidemiology annual meeting November 7-8, 1991, in Atlanta, Georgia,

a workshop entitled "Closing the Gap Through Community Intervention" will be held November 9-10, 1991. This workshop will be jointly sponsored by the American College of Epidemiology, the Black Caucus of Health Workers of the American Public Health Association, and the Society for Analysis of African-American Public Health Issues.

The first day of the workshop, conducted at the Centers for Disease Control, may be attended for continuing medical education (CME) credit. The program will focus on planning, monitoring, and assessing interventions in communities, particularly communities of color. The training will be relevant to public health workers, administrators, and researchers involved with community interventions and their assessment.

The second day of the workshop, conducted at Spelman College, will include an overview of current issues in public health interventions in African-American communities by nationally known speakers. For more information, please contact Dr. Clark Heath, American Cancer Society, 1599 Clifton Rd., NE, Atlanta, GA 30329; telephone (404) 320-3333.

## **Exposure Analysis Conference**

On November 18-21, 1991, ATSDR is cosponsoring with the Environmental Protection Agency and the International Agency on Exposure Analysis the International Conference on Total Exposure Monitoring, Modeling, and Assessment. The conference will be held in Atlanta, Georgia, at the Westin Peachtree Hotel.

This conference will bring together scientists, engineers, and regulatory specialists interested in human exposure and risk assessment from around the world. Technical sessions will be oriented to addressing the collection and use of human exposure data, especially the use of data for exposure assessments, risk assessments, and regulatory decision making. Workshops on technical topics will be a key part of this conference to educate interested persons about human exposure monitoring and assessment.

For further information, contact Sandee Coulberson, ATSDR, 1600 Clifton Rd., NE, Mailstop E28, Atlanta, GA 30333; telephone (404) 639-0700.

## **Exploring Multiple Chemical Sensitivity**

A diversity of medical symptoms falls under the category of multiple chemical sensitivity (MCS). These symptoms have been challenging to occupational and environmental medicine specialists and other medical providers because of the lack of specific diseases to explain them, and their presence at levels of substance exposure previously thought to be without health effects.

Copies of the report are available from Captain Barry S. Stern, M.P.H., Senior Environmental Health Advisor, Bureau of Health Professions, Room 8C-09, 5600 Fishers Lane, Rockville, MD 20857.

### **Lead Abatement Manual**

*Lead Abatement: A Union Training Course for Workers* was developed by the staff at Massachusetts Respiratory Hospital for unions, academic institutions, occupational health clinics, and small businesses. The manual was funded by the Office of Safety, Massachusetts Department of Industrial Accidents.

Written for the layperson, *Lead Abatement* contains chapters on such issues as the health hazards of lead for workers and children, lead inspections, abatement methods, controlling lead exposure, workers' rights, and supervisor issues. Both the Massachusetts requirements and Housing and Urban Development guidelines for lead abatement are referenced throughout. The book includes appendices on regulations, lead paint in historic buildings, material safety data sheets, and resources, as well as 20 illustrations on lead abatement techniques, respirator use, and abatement equipment.

For more information on *Lead Abatement: A Union Training Course for Workers*, please contact Western MassCOSH, c/o Philip Korman, 10 Thurston St., #2, Somerville, MA 02145; telephone (617) 666-1507.

### **TRAINING**

#### **UNC Safety and Health Courses**

The North Carolina Occupational Safety and Health Educational Resource Center is offering Safety and Health Training for Hazardous Waste Site Personnel (HST 24 - HST 40). These courses, which provide 24 and 40 hours of intensive classroom instruction and hands-on training, fulfill OSHA requirements (29CFR 1910.120) as mandated under the Superfund Amendments and Reauthorization Act of 1986 (SARA). The 24-hour training is offered August 12-14 and consists of lectures, discussions, classroom demonstrations, and small group exercises. The 40-hour training, offered August 12-16, includes the 24-hour course, plus 16 additional hours of lectures, demonstrations, and hands-on training.

For more information, please contact Larry D. Hyde, Director, Continuing Education and Technical Assistance, Occupational Safety and Health Educational Resource Center, University of North Carolina, 109 Conner Dr., Suite 1101, Chapel Hill, NC 27514; telephone (919) 962-2101.

### **Harvard Short Courses**

The Harvard School of Public Health, Office of Continuing Education, is offering the following short courses for health care professionals in the areas of occupational health and safety, medical sciences and management, nuclear safety and radiation protection, and environmental management.

*Principles of Biosafety for Clinical, Industrial, and Academic Facilities, August 19-23, 1991.* Topics include basic principles of biosafety, properties of aerosols and their dissemination, hazard control ventilation considerations with an emphasis on biosafety cabinets and chemical fume hoods, ventilation measurements, containment control strategies, medical surveillance, waste management, and disinfection and sterilization. Expected attendance: 50. Fee: \$1100.

*Risk Assessment in Occupational and Environmental Health, September 4-6, 1991.* Participants will learn the epidemiology of environmental and occupational hazards, the development of data from toxicological studies, the use of animal and other data as predictors of human risk, risk analysis within the context of the law, and calculation of risk when data are uncertain. Expected attendance: 55. Fee: \$750.

*Fundamentals of Industrial Hygiene, October 21-25, 1991.* Emphasis is placed on the identification of industrial processes associated with potential health hazards; a review of methodology for the assessment and evaluation of such hazards; techniques for their control; the physiological and toxicological effects of exposures to chemical, mineral, and physical stresses; the establishment of safe limits for such exposures; and applicable guides and regulations. Expected attendance: 60. Fee: \$900.

*Indoor Air Quality, December 10-12, 1991.* This course addresses the potential health hazards of passive exposures to formaldehyde, radon, airborne microorganisms, and tobacco smoke in both residential and commercial environments. Topics include the physiological, toxicological, and perceptual aspects of indoor air quality; analysis of current field studies; the effects of combustion by-products, volatile organic compounds, and microbiological pollutants; and in-field monitoring strategies and instrumentation. Expected attendance: 50. Fee: \$750.

For further information on these and other programs, please contact: Mary F. McPeak, Office of Continuing Education, Harvard School of Public Health, 677 Huntington Ave., Boston, MA 02115; telephone (617) 432-3515; fax (617) 432-1969.

To further the scientific understanding of MCS, the Association of Occupational and Environmental Clinics (AOEC) and ATSDR are sponsoring "Exploring Multiple Chemical Sensitivity," an invited workshop to be held in Georgetown, September 20-21, 1991. The 2-day workshop will convene experts with differing perspectives on MCS and AOEC practitioners who are increasingly involved in caring for MCS patients. Several presentations will be practice-based and will represent a variety of disciplines, including allergy, occupational/environmental medicine, and clinical ecology. Issues to be examined include the following:

- Clinical experience;
- Research findings;
- Possible mechanisms/models of MCS; and
- Treatment and follow-up approaches.

The overall goal of the conference is to propose a research agenda that can be pursued by government agencies, research institutes, and the academic community.

#### **Northwest Center Continuing Education**

The Northwest Center for Occupational Health and Safety, one of 14 Educational Resource Centers funded by the National Institute for Occupational Safety and Health (NIOSH), is responsible for training occupational health and safety professionals in Washington, Oregon, Idaho, and Alaska. The Center offers graduate programs in occupational medicine, occupational health nursing, and industrial hygiene and safety. It also provides continuing education programs, such as those listed below, to upgrade the skills of people working in these and ancillary disciplines.

*Microscopical Identification of Asbestos, September 9-13, 1991.* Bulk sampling and analysis of asbestos with polarized light microscopy. Includes proper use of microscope, good illumination techniques, micrometry and crystal morphology needed for asbestos identification, optical crystallography, analytical schemes for detection and identification of asbestos and other insulation materials, and analysis of unknowns. Fee: \$1000.

*Advanced Asbestos Identification, September 16-20, 1991.* Time-saving techniques, confirmatory tests, identification of unusual insulation components, and differentiation of asbestos "look-alikes." Fee: \$1000.

*Supervising Hazardous Waste Operations, September 25, 1991.* Training in worker protection at hazardous waste operations. Includes planning for health and safety, practical aspects of site supervision, and regulatory update. Meets federal and state requirements for 8 additional hours of specialized supervisor training. Fee: \$75.

*Ergonomics and the Control of Workplace Hazards, October 16, 1991.* Role of ergonomic and other factors in the cause, treatment, and prevention of work-related injuries of the upper extremities and spine. A multidisciplinary approach including medical diagnosis and treatment, ergonomic work-site evaluations, and intervention strategies. Fee: TBA.

*Occupational Reproductive Hazards, October 30-31, 1991.* Current information on identifying, characterizing, and controlling occupational reproductive and developmental hazards. Will include basic toxicological information and risk management options. Fee: \$275.

*Industrial Ventilation: Principles and Applications, November 19-21, 1991.* Application of ventilation principles to control airborne health hazards. Emphasis on velocity pressure method and fan system effects recommended in ACGIH Ventilation Manual. Specific design issues addressed in problem-solving sessions. Fee: \$400.

*Advanced Ventilation Design, December 4-5, 1991.* Redesign of existing systems and optimum design of new ventilation systems. Includes balancing with dampers, massive airflow reallocation, and extensive computer labs using ventilation design computer program. Fee: \$275.

For more information, please contact Janice B. Schwert, Program Manager, Continuing Education, Northwest Center for Occupational Health and Safety, Department of Environmental Health, SC-34, University of Washington, Seattle, WA 98195; telephone (206) 543-1069.

#### **NGA Conference: Making Information Work**

The National Governors' Association's fourth annual conference on integrating data for decision making, "Making Information Work," will be held in Washington, D.C., January 18-23, 1992. The aim of the conference is to explore the role information plays in critical policy decisions regarding education, environment, and health.

The National Governors' Association is a public interest association representing the governors of the 50 states, the commonwealths of the Northern Mariana Islands and Puerto Rico, and the territories of American Samoa, Guam, and the Virgin Islands on issues of public policy and governance. The 1992 NGA conference will provide a forum for government, industry, and academic representatives to share their experiences in applying information technology and explore ideas for making the most effective use of the information resources of state and local government.

Major topics to be addressed at this year's conference are:

- Improving case management and client tracking;
- Enhancing data capture and integration;
- Developing information resources;
- Monitoring emerging systems and technology;
- Understanding international and global perspectives;
- Sharing information electronically;
- Applying spatial display and analysis; and
- Improving staff and organizational development.

For more information, please contact Kristen Gooch, Making Information Work Conference, National Governors' Association, 444 North Capitol St., Suite 250, Washington, DC 20001; telephone (202) 624-5426.

## **CALL FOR ABSTRACTS**

### **Prevention 92**

PREVENTION 92: *Linking Science, Policy, and Practice* will be held March 21-24, 1992, in Baltimore, Maryland. The American College of Preventive Medicine, the Asso-

ciation of Teachers of Preventive Medicine, and 30 other cosponsoring organizations are soliciting presentations through a call for abstracts. Abstract forms and instructions may be obtained by contacting Emily Parker Slough, Meetings Manager, PREVENTION 92, 1015 15th Street, NW, Suite 403, Washington, DC 20005; telephone (202) 789-0006; fax (202) 289-8274. The deadline for abstract submission is September 6, 1991.

## **RESEARCH CENTERS**

### **Oklahoma Center for Toxicology**

The College of Public Health and the College of Pharmacy at the University of Oklahoma Health Sciences Center have developed a Center for Toxicology to serve as a focal point for research and training. The Center for Toxicology coordinates the activities of the Health Sciences Center into a comprehensive program concentrating on analytical, clinical, occupational, and environmental toxicology.

For more information, please contact Dr. Bailus Walker, Dean, College of Public Health, The University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, OK 73190; telephone (405) 271-4000.

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